

AMENDMENTS TO THE CLAIMS

1 to 31. (Canceled)

32. (Currently Amended) A multi-beam scanning optical system

comprising:

incidence optical means for guiding a plurality of beams emitted from light source means having a plurality of light-emitting regions spaced apart from each other in a main scanning direction, to deflecting means;

scanning optical means for focusing the plurality of beams deflected by the deflecting means on a surface to be scanned; and

synchronism-detecting optical means for guiding part of the plurality of beams deflected by the deflecting means, to a synchronism detector ~~by a lens section~~ and controlling timing of a scan start position on the surface to be scanned by use of a signal from the synchronism detector,

wherein, where $\delta M2$ is a defocus amount in a main scanning section of the beams guided to the synchronism detector and in a view from a photoreceptive surface of said synchronism detector and δX is a defocus amount at each image height on the surface to be scanned, the following condition is satisfied:

$$|\delta X - \delta M2| \leq \delta Y_{\max}/\theta_{\max}$$

[[()]]where

δY_{\max} : permissible dot shift amount per scan line, which is not more than half of resolution in a sub-scanning direction;

θ_{max} : maximum angle difference between angles of incidence to the photoreceptive surface of the beams used for detection of synchronism[[]]].

33. (Canceled)

34. (Original) The multi-beam scanning optical system according to Claim 32, comprising correction means for relatively shifting a focus position in the main scanning direction of the beams guided to said synchronism detector in a direction of the optical axis of said synchronism-detecting optical means from the photoreceptive surface of the synchronism detector.

35. (Original) The multi-beam scanning optical system according to Claim 32, comprising correction means for moving the position of said synchronism detector or a unit including the synchronism detector in a direction of the optical axis of said synchronism-detecting optical means.

36. (Original) The multi-beam scanning optical system according to Claim 32, wherein said lens section is disposed in an optical path between said deflecting means and said synchronism detector, said optical system comprising correction means for moving said lens section in a direction of the optical axis of said synchronism-detecting optical means.

37. (Currently Amended) An image forming apparatus comprising:
the multi-beam scanning optical system as set forth in ~~either~~ any one of
Claims ~~1 to 36~~ 32, 34 to 36 and 42;
a photosensitive member placed on said surface to be scanned; a developing
unit for developing an electrostatic latent image formed on said photosensitive member
with scanning light by said multi-beam scanning optical system, into a toner image;
a transfer unit for transferring said developed toner image onto a transfer
medium; and
a fixing unit for fixing the transferred toner image on the transfer medium.

38. (Currently Amended) An image forming apparatus comprising:
the multi-beam scanning optical system as set forth in ~~either~~ any one of
Claims ~~1 to 37~~ 32, 34 to 36 and 42; and
a printer controller for converting code data supplied from an external
device, into an image signal and entering the image signal into said multi-beam scanning
optical system.

39 to 41. (Canceled)

42. (Currently Amended) A multi-beam scanning optical system
comprising:

incidence optical means for guiding a plurality of beams emitted from light source means having a plurality of light-emitting regions spaced apart from each other in a main scanning direction, to deflecting means;

scanning optical means for focusing the plurality of beams deflected by the deflecting means, on a surface to be scanned, to form a plurality of scan lines; and

synchronism-detecting optical means for guiding part of the plurality of beams deflected by the deflecting means to a synchronism detector ~~by a lens section~~ and controlling timing of a scan start position on the surface to be scanned for ~~each of~~ the plurality of beams by use of a signal from the synchronism detector,

wherein, where $\delta M2$ is a defocus amount in a main scanning section of the beams guided to said synchronism detector and in a view from a photoreceptive surface of said synchronism detector and δX is a defocus amount at each image height on said surface to be scanned, a dot shift per scan line on the surface to be scanned, which occurs because of a difference between the two defocus amounts $\delta M2$, δX , is not more than half of resolution in a sub-scanning direction.